

ARE WE READY FOR DISASTER ON THE NORTH COAST?

By failing to prepare, you are preparing to fail!

Ben Franklin

SUMMARY

When the 2013-2014 Grand Jury first convened, we decided it would be prudent to see how well prepared we are in the event of a large scale natural disaster such as a major earthquake. From that idea we chose to investigate **ARE WE READY?** for unpredictable, certain to happen, natural disasters. Great earthquakes, those shaking for more than one minute, have the potential if they occur near to the coast, to cause major damage to our infrastructure, and possibly isolate us from the outside world for a lengthy time period, from a few hours to many days. Distant tsunamis caused by great subduction zone earthquakes have done considerable damage to the North Coast, especially to Crescent City in Del Norte County.

Some of the questions we asked ourselves early in our investigation were: “Who will take care of the injured?” “Who will come to our aid?” and “Who will feed us and provide shelter for us if our homes become uninhabitable or are destroyed?”

As we began interviewing people responsible for mitigating disasters, it became obvious that we were asking the wrong questions from the beginning! **ARE YOU READY?** is the appropriate question to ask, for it is obvious, that no matter how well our county workers are prepared, it is up to individuals to prepare for such disasters. Although there is a well thought out plan in place for coordinated first responders to assist communities during any disaster, most of us will be on our own for several days, and we need to make plans for this eventuality. At the end of this report, we offer suggestions and websites as to how individuals can be proactive and help themselves survive what nature sends our way. Remember, **COMPLACENCY IS NOT A PLAN!**¹

APPROACH

We first interviewed staff from the Humboldt County Sheriff Department and of the Office of Emergency Services. Following those interviews, we visited the Emergency Management Center located in a self-contained bunker under the Humboldt County Courthouse. Humboldt County Ordinance 2203 established the Humboldt Operational Area and identified the Sheriff as Director of Emergency Services for the County. The Humboldt Operational Area is composed of the County of Humboldt, serving as the lead agency, and all political subdivisions (Cities and Special Districts) within the County. The Office of Emergency Services assists the Sheriff in controlling and directing the efforts of the emergency organizations of the County².

Next, since earthquakes are one of our most serious natural disasters in our area, we interviewed a seismologist and other experts on North Coast earthquakes and local or regional tsunamis. Following that, we then called in a person familiar with Community Emergency Response Training to speak on training of lay people and the creation of neighborhood response teams. Some of our members also went to local help organizations for seniors and neighborhood watch groups. We also interviewed a county employee with knowledge of the Emergency Management Operation Plan. The county has prepared this plan in an effort to ensure the efficient coordination

with all political subdivisions of government and the most effective use of all resources (both materials and personnel) for maximum benefit and protection of the population in time of emergency³. This plan was written to ensure that agencies, which adopted the plan, will be immediately eligible for Federal Emergency Management Agency resources.

BACKGROUND

We live in a beautiful part of the state of California, a region sometimes referred to as “Behind the Redwood Curtain,” separated from the rest of the state by vast forests on three sides, with the ocean on the fourth. We can easily be isolated from the rest of the state by closures of the main routes that service our area: US 101 to the north and south, and State Route 299 to the east. Total and partial closures of these vital arteries have happened in the past during earthquakes, floods, massive landslides and fires, and effectively changed our daily routines. Because of our geographic isolation, it is paramount for all of us to think about what might occur as a result of a natural disaster.

We live astride the Mendocino Triple Junction, which is the southern portion of the Cascadia subduction zone⁴, one of the most problematic seismic hazards in the world. We will have large Magnitude = 9.0+ damaging earthquakes in the future. We will experience strong and most likely damaging ground shaking during future local earthquakes: 30 seconds from a M.=7.0, 45 seconds from a magnitude 7.5, 60 seconds from a magnitude 8.0, and over 2 minutes from a magnitude 9.0.

With the inevitable occurrence of future damaging earthquakes, it would be sensible for all of us to think about and prepare for the associated shaking, landslides, ground disturbance and tsunamis that accompany this type of natural disaster. Other hazards we need to consider are forest fires in the inland part of our county, dam failure, hazardous materials spills, extreme weather events, and 100-year floods along the major rivers. Two such “100-year floods” occurred in 1955 and 1964, isolating communities for days with only helicopter and boat travel possible.

DISCUSSION

What we discovered during our investigation was that our county benefits by having many well-informed people tasked with responding to natural disasters. Humboldt County, working with multiple Federal, State, local governments, and educational groups, is proactive with community education and tsunami warnings⁵. Tsunami run-up zones or areas of potential flooding caused by tsunamis of either local or regional origin are modeled. Citizens are encouraged to know evacuation routes out of the tsunami run-up zone in which they live. We now have yearly tsunami siren warning tests as well as communities practicing evacuations out of tsunami run-up zones. The Office of Emergency Services is staffed, with its headquarters under the northwest corner of the Humboldt County Courthouse (partially beneath 4th Street). This Office has prepared a plan for North Coast disasters. The response and functionality of the Office of Emergency Services has been tested by major earthquakes in 1992, 1994, and 2010; floods in 1986 and 1997; forest fires in 2004, 2007 and 2013; and tsunami alerts in 2004, 2009, 2010 and

2011. Thus far, the preparation and training of our emergency responders seems to be working, for there were no obvious deficiencies that stand out in any of those emergencies.

The North Coast Tsunami Working Group is an *ad hoc* educational outreach group, comprised of experts in earthquake and tsunami research that strives to educate the public on how to respond to these naturally occurring disasters.

Ham radio operators play a key role in communication during any disaster and are linked into Office of Emergency Services, thus establishing an additional communication link to the world outside of Humboldt County.

Humboldt County has been a leader in tsunami preparedness; other counties are following our lead. The Office of Emergency Services, National Oceanic and Atmospheric Administration, North Coast Tsunami Working Group, the Red Cross, and countless volunteers started doing evacuation drills for communities in 2007 and began testing tsunami sirens in 2008. Tsunami run-up zone maps for the North Coast are available online (see important websites at end of report).

A Disaster Scenario

Imagine that a large earthquake occurs in the middle of winter when the ground is saturated with rainfall. Let us also assume it is not the largest that we could experience, but that the shaking lasts 60 seconds, equivalent to an earthquake with a magnitude of 8.0; last experienced in Humboldt County in 1906⁶. Since the ground is thoroughly saturated in most winters, landslides would occur everywhere in the county. Roads in Humboldt County would be impassable, possibly preventing first responders' arrival for days. Communications could be disrupted, fire and police would encounter problems responding, and even the personnel trying to get to the Office of Emergency Services command center could be faced with travel obstacles. Power most likely would be disrupted, some structures would be compromised, and gas leaks could cause serious life-threatening situations.

And What You Can Do To Prepare?

Here is where you can help yourself: Rather than being surprised by such a crisis, preparation for any disaster can pay huge dividends and even save lives of friends and family and neighbors. While most people within our county expect "the government" to come to their aid, this will most likely not happen as quickly as we might hope. Take the steps now to think about how you and your family and neighborhoods can mitigate the problems you will face during a disaster such as this. *Living on Shaky Ground*, a free publication available from the Earthquake Education program in the Geology department at Humboldt State University, has many suggestions on how to prepare for such a disaster.⁶

Community Emergency Response Training or CERT is becoming more commonplace across the United States, and the sight of volunteers' green vests is becoming more recognizable identifying prepared responders. Cost of the training ranges from \$30-100 per person, depending on

available sponsors, and the time commitment is about 20 hours. Many communities across the nation have found grant monies or companies to subsidize the costs of this type of training.

At the end of this report, we have compiled a short list of important web sites that provide further information to help YOU understand and plan for disasters as well as suggestions

About what YOU can do beforehand that can help YOU survive! **Remember, COMPLACENCY IS NOT A PLAN!! By failing to prepare, you are preparing to fail!**

FINDINGS

- F1. After a serious disaster, citizens most likely would be on their own for days, or possibly weeks. People need to have a plan to take care of themselves, their loved ones, the dependent elderly, and pets.
- F2. The Office of Emergency Services Director has decades of experience with several types of natural disasters, but plans on retiring in the next year.

RECOMMENDATIONS

- R1. Individuals need to be proactive and get their emergency plan in place, for it is very likely no one will or can come to their aid for 72 hours following a disaster. This means that you should build an emergency supply kit including pet food and medical supplies, talk about a family emergency plan, be informed what disasters you might experience, and know how to turn off your gas and power. Your plan should include a text tree (using cell phones to contact friends and relatives), food, water, medicine, and shelter. First aid kits, flashlights and a battery or manually powered radio are also recommended. (F1)
- R2. **KNOW YOUR ZONE!:** If the disaster is an earthquake and it shakes for more than 30 seconds, first and foremost, the main idea is to remain calm and try to get through the shaking: duck, cover and hold. You then need to decide what zone you are in, and if you are in a tsunami run-up zone, head immediately to higher ground and away from the coastline. In the mountains, watch for falling rocks, landslides, and/or falling trees (limbs). Know your way out in forest fire-prone areas. Know dangerous/past flood zone areas. (F1)
- R3. The Office of Emergency Services should continue in its efforts to inform citizens of Humboldt County about the Community Emergency Response Training program to increase their knowledge of disaster survival techniques. (F1)
- R4. The Board of Supervisors should work quickly to replace the retiring Office of Emergency Services Director to insure continuity in this very important position. (F2)

REQUESTS FOR RESPONSES

Pursuant to Penal Code section 933.05, the following responses are required:

- The Humboldt County Board of Supervisors (R3 & R4)

The Grand Jury invites the following Office to respond:

- The Humboldt County Office of Emergency Services (R1 & R4)

Reports issued by the Grand Jury do not identify individuals interviewed. Penal Code § 929 requires that reports of the Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Grand Jury.
--

IMPORTANT WEBSITES

<http://co.humboldt.ca.us/sheriff/oes/> : Describes the Office of Emergency Services and its relationship with State and Federal Offices. One can find information on earthquakes, fires, Federal and State responses to emergencies, tsunami inundation maps, how to make family plans, and emergency kits and more. This is a very useful site for anyone trying to mitigate the negative effects of disasters, and to understand what to expect here on the north coast.

<http://www.calema.ca.gov/Pages/default.aspx> : The State of California Emergency Services Site, a virtual library of facts and information, including how the State is preparing for every type of natural disaster.

<http://www.fema.gov/>: The Federal Emergency Management Site.

http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Pages/education.aspx:
Tsunami informational Site.

<http://www.humboldt.edu/rctwg/> : North Coast Tsunami Working Group educational site.

ENDNOTES

¹ *Marin County Grand Jury Report, 2011*, “Disaster Preparedness in Marin: Are You Ready?”

² <http://co.humboldt.ca.us/sheriff/oes/>.

³ <http://co.humboldt.ca.us/natural-resources/hazardmitigation>.

⁴ Dengler, L., G. Carver, R. McPherson, “Sources of North Coast Seismicity”, *California Geology*, Vol. 45, No. 2, (March/April, 1992): pp. 40-53.

⁵ Board of Supervisors Meeting (Minutes), March 18th, 2014.

⁶ Humboldt State University, Earthquake Education, Geology Department, *Living on Shaky Ground*. <http://humboldt.edu/shakyground/>.